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LESSONS FOR
U.S. INDUSTRIAL POLICY

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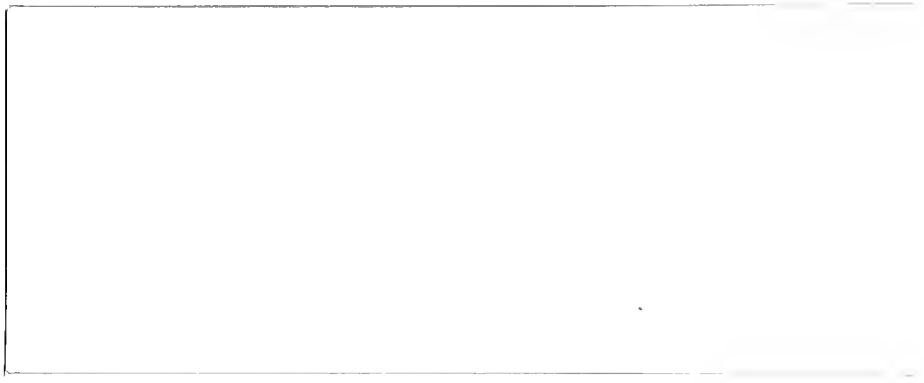

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The performance of the Italian economy, like many other recent phenomena, has confounded the expectations of conventional economic analysis. In the last two years, Italy registered a rate of economic growth faster than any of its partners in the European common market: it displayed the most rapid growth in productivity, overall and particularly in the manufacturing sector. Its balance of payments was at least as favorable as any in the common market. It did this, despite an inflation rate of 20% a year (twice as high as that of the U.S.; almost 3 times the rate of Western Germany, one of its major continental competitors); despite a total dependence upon imported foreign oil and despite a national wage structure tied to an inflation escalator in a complex way that some analysts believe actually drives up wages faster than the price inflation for which it is supposed to compensate. [1] The wage escalator is a product of one of the strongest trade union organizations in modern history. So too are a whole series of other restrictions on managerial freedom to hire and fire and pace work which one might have supposed would further stifle national economic growth and handicap Italian manufacturers in international competition.

But ultimately, we will argue, the political and economic organization of the left, the trade unions and the Italian Communist Party (PCI),is a key to explaining the recent evolution of the Italian economy. Much of this explanation is paradoxical in the light of conventional thinking about economic development and trade union activity, particularly in the United States. For that very reason, it contains important lessons for us: lessons for American economists who have shown a conspicuous failing to forecast economic events and to diagnose and prescribe for the nation's economic ills: but also lessons for American trade unions, who have been progressively losing ground in those sectors of the

economy over which they once had mastery, and who find themselves suddenly on the defensive in the political realm as well.

The center of the new wave of Italian growth is a vast network of very small enterprises spread through the villages and small cities of central and Northeast Italy, in and around Bologna, Florence, Ancona and Venice. The Italians themselves have begun to call this area the Third Italy to distinguish it from the older industrial triangle (defined by Milan, Turin, and Genoa), and the less developed South. [2] These little shops range across the entire spectrum of the modern industrial structure, from shoes, ceramics, textiles and garments on one side, to motor cycles, agricultural equipment, automotive parts, and machine tools on the other. The firms perform an enormous variety of the operations associated with mass production, excluding only the kind of final assembly involved in the automobile production line. The average size of the units varies from industry to industry, but it is generally extremely small: shops of 10 or less are not unusual.

In the last two years, we visited a number of these small shops and interviewed proprietors, workers and trade union officials about the history of the enterprise and their current operations. They are virtually all family firms, and many in fact employ only family members. Workers in the shops say they use artisanal rather than industrial techniques of production. [2] But although many of these enterprises depend in some ways on the traditional Italian family structure, and build on traditions of small craftsmanship, their organization does not correspond to the popular image of a family of artisans at work.

Some of the small plants are simply sweatshops, where exploitation of

previously under or unemployed workers compensates for primative methods of production. But there is also a significant group of firms which must be counted as part of the most sophisticated and technologically advanced sectors of the industries in which they operate. Most of the shops we vistied were of this type. They work with machinery adapted to their unusual size and structure; and they yield some of the highest earnings in Italy today.

The machine tool shops we visited near Bologna are clear examples of this second, more modern, type of firm. [3] Here the most advanced factories have been moved out of the house-hold into industrial parks built by the city. Some of these parks have over 300 little shops of 10 to 15 people. The equipment is modern and expensive: numerically controlled machines are increasingly common even in the smallest shops. The lay-out and flow of work is fully rationalized and industrial. There are also small shops in garages in residential neighborhoods, definitely more crowded than those quartered in the industrial parks, but with modern components and plans for further modernization.

But even in a poorer and more backward area of small industry like the Adriatic province of the Marche, we saw obvious signs of technical and organizational sophistication. [4] The typical factory in the Marche produces shoes for the luxury market in Italy and abroad. It is housed in the ground floor of a building, usually constructed within the last five years. Above the factory are two or three floors of apartments for the several households of the extended family which owns the factory. The workrooms are clean and spacious. A number of hand operations are interspersed with the mechanized ones. But the machinery is fully modern in technology and design. Sometimes it is exactly the same as that found in a modern factory, sometimes a reduced version of a larger

machine. The work is layed out rationally: the workpieces flow along miniature conveyors whose twisting shape creates the impression of a factory in a doll house. Not all the factories which we visted in the Marche, of course, look this way: in a great many, production is still centered in the garage and the stitching and finishing operations overflow into the dining room next door. But the tendency is toward the other form of organization. The miniature conveyors are everywhere; all factories seem to have some of the new pieces of equipment: and the announced ambition of most families is to build their own apartment/factory complex.

In all of these industries, the people work very hard. Children start to work young and are expected to work summers and after school. But the industrial sector no longer survives primarily through the exploitation of family members. The pace of work, judged by comparison with contemporary American factories producing comparable products, appears to be steady and deliberate but slow. Work stops at noon for lunch: in the shoe factories, the family goes upstairs to their apartments. The machine tool shops in the industrial parks of ten have separate lunch rooms, as well as locker and washrooms. In some cases a large industrial park is served by a collective cafeteria. People also live well: they have expensive cars--a real luxury when one simply walks downstairs to work--and sometimes seaside condominiums. They are well traveled and visit frequently the major cities of Italy, Germany, Great Britain and France, partly for business but, evidently, with pleasure as well.

Two Views of Italian Decentralization

Where do these small businesses come from? How ultimately do they manage to

survive?

The proximate cause of current developments was the extreme rigidity of employment and work conditions which workers imposed in larger enterprises in the late 1960's and early 1970's. In that period, the masses of unskilled workers drawn from firms and artisans' shops into the large Northern factories during the first economic miracle found that a booming economy, tight labor markets, and the ruling Christian Democrats' weakening political authority allowed them to seriously challenge, for the first time since the late 1940's, management's unilateral control over the work process. Where union organizations already existed, they were dramatically strengthened; where none existed, new ones grew up almost overnight. Generally the new institutions grew out of and were reinforced by informal groups of workers which grew up on the shop floor. These organizations (formal and informal but eventually backed by national legislation) made it extremely difficult to lay-off or discharge workers, either for economic or for disciplinary reasons. They also exerted control over work practices and plant operations which mangement found, psychologically if not always technically, extremely restrictive. Of these the most burdensom on both counts was the unions' capacity to limit through plant-level bargaining the pace of assembly-line work and the percentage of time on the job spent actually working.

At the same time, partly as a result of labor's political power, but also because the Italian state found it convenient to raise revenues for many purposes through social welfare taxes, employers were forced to pay what amounts to a head tax on every employed worker: extensive social security taxes and other fringe benefits which now, in Italy, amount to 49% of the wages (compared to 26% in the

U.S.; 39% in Germany.

Table I

Fringe Benefits as Percent of Total Compensation per hour work

	1978	1979
Italy	49%	49%
Germany	38	39
France	43	44
U.K.	21	22
U.S.	26	26
Japan[b]	14	14

Source: U.S. Bureau of Labor Statistics, 1980
a) Computed from average hourly earnings and total compensation per hours worked.
b) Includes pay for time not worked.

The massive decentralization of production to small shops in the early 1970's was a response to these developments. To escape the new shop floor restrictions, large firms began to subcontract extensively to smaller and smaller units of production. The smaller units were more economical because they escaped union organization. They were able to discharge workers when demand dropped off; they were much freer to organize work in their own way. In addition, they escaped the union imposed fringe benefits, and often evaded state taxes and fringes as well. In the beginning, wages were also below union-scale, reducing costs still further. At that time, the decentralization production was less efficient in a fundamental technical sense: given comparable wage and fringe costs, and absent the restrictions upon discharge and on work practices, the small firms would not have been able to compete for in-house production. If the organized sector and legislative standards could be said to define the social norm, decentralization represented a new form of exploitation.

This set of developments was the basis for the interpretation of decentralization which, with different political accents, has dominated discussion among trade unionists and industrialists of Italian industrial structure from the mid 1970's almost to the present. One presupposition of this view is that the future of manufacturing in Italy, as elsewhere in the advanced industrial countries, lies in the giant, centralized factory with its economies of scale and standard products. A second is that the unions' restrictive practices in the large Northern factories, though (in the trade unions' version of the argument) justifiable as a response to the management's unilateral powers, amount in their current form to an unnatural obstacle to efficient organization.

Decentralization, on this view, is therefore seen as part of management's bargaining strategy for reestablishing effective control over the plants. The threat is straightforward: unless the unions relaxed their grip in the main plants, they would see one phase of production after another shifted to the artisanal sector; or, when economies of scale make that impossible, to subsidiaries abroad. The dispute between management and labor was not a question of whether production ought to be eventually recentralized--both agreed that it did--but rather a problem of just which restrictions to count as inherently inefficient.

This interpretation worked best as an explanation of the spread of sweat-shops and homework since it was these which most openly violated all the rules imposed on the large firms. [5] But linked to theories of industrial dualism, it could be extended to explain at least part of the success of the more modern small firms as well.

In a world dominated, as this view supposes, by standard products sold in

mass market, it pays to invest in the highly specialized capital equipment involved in deskilled jobs and automatic (or automated) manufacturing. But in such a world, however, there are peaks in the demand for any one product. Because these peaks are by definition short-lived, it is senseless to make a long-term investment in highly specific equipment to satisfy them. For this demand, it is economical to use a much more flexible labor force and less specialized, more versatile tools which can be transferred to other uses when the demand for any given product drops. The production of specialty items for which demand is limited also requires a more versatile labor force, and flexible tools and equipment. In these kinds of production, the economies of scale and conglomeration are substantially smaller: in some cases, in fact, scale and conglomeration are a real handicap to the continuous adaptation to shifting markets and product design. The more unstable the world economy, moreover, the greater the rom for specialty producers, since large firms will be less willing to invest in products and production facilities which might be rendered unattractive because of changes in raw materials prices, interest rates, and so on. [6] One way of understanding post-1969 Italian development's, therefore, is that the small scale sector in Italy has prospered by capturing, first in their own domestic market and then abroad, a growing segment of industrial demand which hs been artificially enlarged by political disturbances such as the oil shocks.

There is certainly something to this view. It is true that decentralization was and remains part of a larger bargaining strategy, and that the small firms have prospered as subcontractors, filling in the gaps in the production strategy of the parent firms. Nonetheless, this first interpretation slights three

increasingly significant developments of the small sector, developments which can be combined with experiences in other countries to produce a wholly different understanding of the transformation of Italian industry.

The first set of developments has to do with the organization of production. People began to develop manufacturing techniques which have made the small shops increasingly efficient. Machinery has been adapted to the small productive units. Designers have begun to specialize in the solution of production problems for these very small enterprises, and equipment manufacturers, themselves small operations, to concentrate on the production of the required instruments of production. In some cases the placement of large machines on the factory floor is simply changed to fit the available space, or the larger equipment is miniaturized. In other cases, however, artisanal techniques of smelting, enameling, weaving, cutting or casting metal are designed into new machines, some of which are controlled by sophisticated microprocessors. At the same time, large enterprises have started to use sophisticated data processing techniques to reduce the cost of passing production back and forth between the mother firm and its small satellites. Together these advances have lead to a rapid increase in the productivity of the small enterprises and reduced the element of exploitation, understood as conditions of employment below the norm established by collective agreement in the large enterprises, in the competition between large and small-scale productive organization. [7]

The second set of factors has to do with the small firm's markets and the design of their products. Initially, and despite the fact that they could bargain over prices in good times, the subcontractors were the hostages of the large firms good will and prosperity. Often the large clients delivered the

tools, blueprints, and starting materials necessary to make a part. And since most of a subcontractor's clients were likely to be in closely related fields, a major economic downturn tended to affect all at once, making it difficult for the small firm to offset the loss of some orders with an increase in others.

In part out of fear of this dependence, in part out of the desire to expand business, and even in part, a fascination with new technologies many small firms have broken the hammerlock of the large clients by developing and marketing products of their own. Generally the new product is born out of the owner's expertise of the market. He realizes that some variation of a successful, mass-produced, good, or component part will be especially appealing to a certain group of customers, whose complaints about existing products he may have heard for years. He knows too that once he has begun to do business with such a group, he will gain still more detailed knowledge of their needs, thus establishing himself as an indispensible collaborator and breaking the big firm's control over the definition of his products. [8]

Thus, in the shoe industry, the small enterprises produce for the high fashion, high quality sector of the industry, where a premium is placed upon distinctiveness and originality in design. They see themselves as mediating between the very top of the fashion world, which is controlled by hautes coutures of New York and Paris, and the mass production of cheap immitations of the fashionable models for chain stores. Local designers travel to the major fashion centers in Europe, when the haute couture houses present their shows, copy their designs, and work from them to produce a large variety of models. The models are then usually presented to high priced specialty shops of the "quality" department stores who order particular items in small lots. The manufactures

produce almost exclusively to order: they maintain virtually no inventories. The designers are sometimes simply other small specialized firms who sell their designs to manufacturers (often producing the patterns and cutting leather for these designs as well). But sometimes the manufacturers themselves design the shoe and subcontract only the pattern making. Virtually all the manufacturers seem to travel abroad to trade shows, partly to look at new equipment or to contract customers but also to develop an "eye" for the current fashions and to place themselves in a position to judge the designs themselves.

Similarly, the motorbike industry around Bologna produces a specialty item, a cut above the mass market but in no sense competitive in the professional racing market, where bikes are precision engineered and produced to order. Equipment manufacturers come a little closer to entering a customers' market, but again not a market for one shot deals. Thus, they tend to repeat with some frequency the production of, for example, a given cigarette packing machine; but the orders never justify the production of more than a few at one time. Single orders, which are customed designed, are adaptations of a more general model for which there is a more substantial demand. Parts production for these machines is often subcontracted to other small machine shops, sometimes but not always smaller than the manufacturer who sells the final equipment. And, again, the machine shops are job shops: producing small lots but almost never unique pieces.

In practice of course the design of machinery suited to small-scale production and the definition of new products do not go on in isolation from each other. On the contrary, the use of new machines stimulates the search for new products, and vice versa. One small shop we visited, which originally

specialized in the production of plastic chairs, invested in a particular injection moulding machine only to discover that the bottom had dropped out of the chair market. It saw its problem as one of inventing a new product, and developed a nozzle for new kinds of irrigation systems which could be produced on the same machines. Conversely, the design of a new product calls for modifications, sometimes substantial, of existing equipment.

The cross fertilization is carried out quite deliberately in the small consulting firms which have emerged to serve the needs of the dynamic small firms: engineers, machine designers, and draftsmen, all with extensive production experience, shuttle back and forth between increasing the efficiency of the existing small-scale operations and increasing the range of those operations, using the knowledge gained in one phase of their work to suggest solutions in the other. In one case a particularly foresighted owner of a rapidly growing transmission firm established "industrial' and "artisanal" production lines side-by-side in the hope of learning more about each from the other. But most frequently ideas are exchanged between owners, skilled workers, or consultants in different firms.

This constant innovation in products and production technologies in turn depends on and reinforces a third aspect of the small sector: forms of collaboration within and between firms which do not square well with the image of independent enterprises competing for a limited number of spaces in the market. Innovative small firms, first of all, rely on the close cooperation of workers with different kinds of expertise. This reliance follows from the firm's relation to its clients. It does the small firm no good to propose a new, customized product if the new design cannot be supplied at an affordable price.

Hence discussion of design must be closely linked to discussion of production; and the final blueprint, which must be available quickly, can only be drawn after consultation between technicians and production workers who trust one another's estimates and expertise.

The internal division of labor in these firms thus tends to be extremely flexible. Owners, engineers, technicians, production heads, and skilled craftsmen work in close contact with each other and hierarchical distinctions tend to be treated as formalities. Unskilled workers, however, are often excluded from this circle, particularly in large firms.

The need to collaborate in the production of new products and the perfection of small-scale manufacturing technique shapes relations between the dynamic small firms as well. Small dependent subcontractors in the same sector compete with each other, no holds barred. But the more specialized each firm becomes, the more likely they are to collaborate, subcontracting to each other or sharing the cost of an innovation in machine design which would not pay for one producer to order by himself. Often in fact the relations between the innovative firms resembles the collegial relation between good doctors, good lawyers, or good university teachers: each firm is jealous of its autonomy, over proud of its capacities, but fully conscious that its success and very survival is linked to the collective efforts of the conformity to which it belongs and whose prosperity it must defend.

One source of mutual dependence on related firms, we found, is the firm's innovative strategy. At first a subcontractor seeks shelter from price competition in intense specialization: the capacity to tailor a particular part or component to special conditions. The disadvantage of this concentration of

attention on one particular is that it distracts attention from all the others: the moment the firm begins to expand and move beyond its original specialty it finds itself dependent on the help of neighbors with complementary kinds of specialities; and since the neighbors can never exactly anticipate when positions will be reversed, the help is forthcoming.

The more the system of related, innovative small firms expands and prospers, pressing against its original limits, the more explicit the collective character of the activity becomes. The artisans realize that to expand business they must increase the sophistication and range of their products; and the only means to that end is to increase the range of sophistication of their capital equipment. But investment in exotic equipment is risky. No one is likely to undertake it unless he is confident that his friends will help him utilize the new machine by passing along orders even when there is no immediate profit to them from doing so: mistrust freezes technological progress of a whole sector, trust fosters it. The same logic applies to every phase of business: where invention creates demand and invention is collective, this a natural result.

This sense of mutual dependence is further reinforced by an appreciation of economies of scale which can sometimes be achieved by explicit collaboration. For most aspects of production, the small firms are not at adisadvantage because of their size: they have found that economies of scale exist at the level of one or a very few machines, not whole factories. Three lathes in each of three shops are at least as efficient as nine lathes under one roof. [9] But firms, for example, can seldom maintain white collar staffs to handle marketing, accounting or even technical services. This has led to a blossoming of cooperative service organizations, associations of artisans and other small producers to pool

resources. Consortia of small employers also purchase raw materials and secure bank loans at better prices than single firms. Thus narrow economic considerations combine with less precisely calculable ideas of collective advantage to create a sense of professional solidarity which is the backdrop and limit for competition between the firms.

To make sense of these aspects of decentralization, some observers have begun to shift perspective. [10] Instead of seeing small firms as essentially a response to disturbances in the natural operation of large-scale industry, they see their successes as a sign and result of long-term trends in the organization of factories in the advanced industrial countries. This view, which is beginning to circulate among the small industrialists and the trade unionists most closely in touch with them, rests on two related assumptions. One concerns structural impediments to the continued success of mass production in the core industrial countries; the other concerns the nature of industrial forms which may replace it.

The first assumption is that the behavior of the labor force in the core countries is in the long run an important, perhaps decisive obstacle to mass production there. On this reading, the problems in large-scale manufacturing facilities in Northern Italy are one more example of the trends in industrial development which lead experienced industrial workers to reject the conditions of work in large, bureaucratic industrial organization, and to seek to circumvent them through union organization and work place restrictions. These conditions were accepted in the earlier postwar decades because the work force was heavily populated by new industrial recruits from rural areas or from a declining

artisanal sector. Many of these recruits thought of industrial work as temporary and planned to return: but even those who viewed their industrial commitment as permanent measured the income and the conditions against the standard of rural poverty in which they had grown up. As the realization spread in the 1960's that there was no real prospect of return and as the industrial labor force became increasingly dominated by a second generation for whom there was no rural point of comparison, conditions in industry were increasingly seen as unacceptable and intolerable. This changing perspective, it is argued, sparked the riots in the factories, not simply in Northern Italy, but in a number of other European countries, whose industrial labor forces had previously been fed by recruits from domestic agriculture and by foreign immigrants (a large number of them Italians) as well. [11] The "guest workers" programs which most of Europe installed in the 1960's are viewed as the last attempt to evade the consequences of the maturation of their own domestic labor forces, but these seem to have failed because the immigrant workers settled in much larger numbers, and the attitudes of those settled workers changed far more rapidly than had been anticipated.

The upshoot of this view is that labor costs in the advanced, older industrial countries will rise relative to the late-comers with labor forces new to factory work. Since standard products are generally produced with mature technologies easily installed in many parts of the developing world, this means that labor troubles in the established factories open the way to the transfer of production to developing areas.

The second assumption is that as mass production moves out of the core countries, their manufacturing industry will be more and more directed towards the kind of specialty markets now being created in Italy. [12] In part this

outcome is regarded as merely a logical result of the first assumption: as low-wage competition from developing countries grows, a reasonable response of core industries will be to move up market and produce specialty goods suited to the particularities of local customers.

The shift to specialty production is however also thought to be partly the result of economic changes unconnected to the use of labor. Of these influences the most widely noted has been rapid fluctuation in the price of raw materials, particularly oil. These fluctuations encourage experimentation in products and production processes, calling established tastes into question and clearing the way for a profusion of new designs. Increased government regulation of products and processes, different from country to country, works the same way. These tendencies are then seen as reinforcing the effects of labor difficulties on the large firms, setting in motion a logic of differention whereby company after company, industry after industry, each for reasons of its own, has begun to specialize production, forcing its competitors to do the same.

In this light the success of the Italian small firms looks like a fortuitous leap forward to a new and viable form of production. If mass markets are broken up, capacity to make the largest number of different goods at the lowest total price in the shortest total time will on this second view prove more important than the ability to turn out any one, standard good at the lowest possible cost. And the defining characteristics of the small Italian firm nicely meet the general specifications for such flexible production: close collaboration between manufacturer and client; close collaboration between different groups within the firm and between the firm and its neighbors; and, as a corollary to these, general purpose machines, and a broadly skilled workforce. Although there may be

many institutional forms other than the small firm for meeting these requirements some parts of Italy may have stumbled onto a workable solution to problems which will more and more preoccupy the core industrial countries. In sum, then, the dynamic small scale production in Italy appears to emerge in a three part process. It orginated in the decentralization of production from large factories in the late 1960's and early 1970's as an effort on the part of management to prevent regidification of production techniques in large factories. This first phase gave rise to the first interpretation of the small forms as both a club against the unions and as successful subcontractors in their own right. Two subsequent developments are conceptually distinct although intertwined in place and time. The first was an effort of the small producers, initially operating on subcontracts from larger firms, to escape this subordination by carving out nitches in the world market or developing new, specialized products, the second was the adaptation of technology and managerial techniques which were initially copied from the larger enterprises, to the peculiar needs of small scale production. The lead in the development of new techniques came from some of the small firms themselves, who, having solved their own production problems, began to specialize in developing techniques in others, developing their specialization into a market which gave them the much sought-after independence from the demands of large scale enterprises. This phase of adaptation and independence also saw the blossoming of new, cooperation institutions. Together these developments encouraged a second interpretation of the small firms as a distinct form of production appropriate to the emergent situation of the core industrial countries.

It is hard to find conclusive proof for either of these two interpretations. Only time will tell if the growth of the specialty firms rest on growing share of a stable or temporarily enlarged fringe sector, or on opportunities created by the redefinition of the world market. But two strands of evidence incline us to favor the second and more radical view. First there is growing significance of the modern type of small firm: the rise in wage levels, success in international-markets, and surge in investments and technological inventiveness characteristic of some of the areas of decentralized production do not fit well with the image of the small firms as subcontractors (if not sweatshops) living from cheap labor and old equipment.

Although it is difficult to measure the relative weight of this new sector of advanced firms, some aggregate statistics will give an idea of its vitality. In Emilia-Romagna, the center of the small metalworking firms, wage levels in 1969 were 90% of the national average, and almost 20% below levels in Piedmont, the richest industrial area. In 1977 wage levels were just over the national average, and less than 4% below the Piedmontese standard. Investment per employee, just under the Piedmontese level between 1971 and 1973, had risen to about one and one half times the latter by 1975-1977. Because of the new investments, productivity increases have keep pace with the rise in wage levels, and the difference between the value of a worker's product and his wages or cost to the firm continues to be extremely high in Emilia-Romagna: from 1971 to 73 it was 1,135,000 then current lira per employee in manufacturing industry, rising to an average of 3,185,000 current lira from 1975-77. Between these same two periods per capita value added in Piedmont rose from 832,000 to 2,484,000

Lira. A further sign of prosperity are the region's tight labor markets. In 1966 the official unemployment rate in Emilia-Romagna was 1.3% above the national figure, while the Piedmontese rate was 1.5% below. By 1978 the rates in the two regions had drawn even at 2.8%, just short of 1% below the national average. Detailed studies of technological change in the region's industries support this picture of dynamism. But the most dramatic proof of prosperity is the rapid advance of Modena, a manufacturing center regarded as the symbol of the Emilian model, in the national league tables of provincial income: as measured by per capita GNP, Modena was the 17th richest province in 1970, the third richest in 1978. Bologna moved from 14th to 6th, while Reggio-Emilia improved from 12th to 7th. [13]

Second, there is the growing tendency in large firms in and outside Italy to move, however haltingly, in the direction of flexible production. Assembly islands and job rotation in place of rigid assembly lines; flexible, computer programmable equipment in place of single-purpose, dedicated machine tools: these are widely seen as a response to the growing variability and diversification of markets. The implication is that firms experimenting with these new techniques of production are trying to adapt to the same forces which are putting powerful winds in the sails of the small Italian firms. [14]

Later we will see that despite their differences these interpretations have chastening and overlapping implications for American industrial policy. But before turning to these lessons, it is necessary to look at some background conditions of Italian developments which seem to limit or color their significance for other nations: the role of family and artisanal traditions on the one hand, and the labor movement on the other

Artisanal and Family Traditions

Small scale Italian industry was not, of course, originally produced by the large firms'demand for decentralized, small subcontractors alone. There were certain long-established features of Italian society which facilitated the emergence of the new sector. One of these was the old artisanal tradition itself, another the extended family which lives and works as a unit. But as we will see in this section, the importance of both of these factors is easily and often overestimated: Italian artisanal and familial traditions seem on balance to have contributed to the growth of the innovative firms in some areas without however serving as an indispensible precondition of their success.

The influence of the artisanal tradition is most noticeable in areas like Emilia-Romagna, where centuries of handicraft product for international markets created a web of relations and a store of knowledge of trading practices which could be placed in the service of the new firms. In such areas many of the new entrepreneurs and skilled workers learned their trade as artisans' apprentices; and in a few instances traditional shapes gradually made the transition to modern industrial work. [15]

But the really important role of the artisanal tradition seems to have been less as a resevoir of manual and commercial experience than as the mold for the legal and political vessel in which the small shops operate. The small scale firms are included in a legal category which enables them to escape much of the tax and labor legislation which governs the large enterprises: the Statuto dei Laboratori, for example, which defines the unions' rights in the plant, does not apply to firms employing 15 or less workers. This obviously gives the small

firms numerous possibilities to reduce the direct costs of production and increase the flexibility of their operations. [16] In this sense the crucial significance of the term "artigiani" is legal in the same way that the significance of a charter of corporation confers certain legal privileges on a group of shareholders.

It is of course difficult to assess the advantage these privileges give the small firms relative to the large ones, if only because the latter themselves benefit from a complicated series of exemptions (including occasional foregiveness of their social security obligations), as well as from the low production costs of the former. [17] It is clear, however, that many small firms could not have survived in the early 1970's without some form of exemption, just as it is also clear that most successful, innovative small firms now pay such high wages and offer such attractive working conditions that they could survive without any special consideration. The point to underline here, and to which we will return later, is that it was not the artisanal tradition per se, but rather a set of political and legal provisions which might have arisen in a number of different ways which proved most helpful to the small firms.

The tradition of family enterprise incarnated and idealized in the old artisanal work shop and the family farm, admired from afar by landless farm hands industrial operatives, has likewise facilitated the development of the new firms without having served as an irreplacable foundation for them. This tradition has contributed in three ways to the growth of the small sector: as a source of labor, a source of entrepreneurship, and a source of capital. [18]

The tradition functions in this way almost as a matter of definition. It ensures that children will begin work young, sometimes at 14 or 15 or even

earlier, in the family firm and often continue working there at wages lower than outside. In the mid and late 1970's in Italy, it meant that some educated, young people who went to school to avoid manual work, but for whom the economy cannot provide white collar jobs, would accept jobs in a family firm out of loyalty to the ideal. The same ideal has also facilitated the accumulation of capital across generations and the pooling of resources of several different households to finance plant and equipment. Finally generations of husbanding resources on a small plot of land, often as a sharecropper or in a small artisan's shop, served as a school for entrepreneurship, teaching people to adapt themselves quickly to the market.

At the same time, however, there seem to be ways of providing entrepreneurship, capital, and labor for the small firms which do not rely in any direct way on the family tradition at all. Some of the entrepreneurs in the metal working sector, for example, are former skilled workers who were fired from large factories during the purges of leftists in the 1950's: they used their severence pay, skills, and connections with lower-level production managers to set up small shops, which then benefited from the wave of decentralization at the end of the 1970's. In other cases the new firms were founded more recently by younger skilled workers with the encouragement, and sometimes the financial help, of their old companies; and in still others, the entrepreneurs come from white collar families. Direct experience of entrepreneurship on the farm or in the artisan's shop does not, therefore, seem the only way to acquire a taste for it. [19]

Similarly, public and semi-public institutions provide alternatives to family credit and labor. In some regions cooperative banks have acted as a

complement, and at times a substitute, for family financing. This tradition is particularly strong in the Venetian provinces, where it has been encouraged by the Church, and in Emilia-Romagna, where it has been encouraged by the leftist parties. [20] And labor reserves can be augmented through apprenticeship programs and, where local youth refuse unskilled employment, the use of immigrants. Again, Emilia-Romagna makes use of both. [21]

Examples of this kind suggest that artisanal and family traditions represent only one of several paths to the same result. In fact it is reasonable to suspect that other potential solutions to problems surrounding the creation of the new firms were not tried simply because traditional mechanisms, formed under completely different circumstances, answered the questions posed by the growth of the modern small firms almost as soon as they were asked. Conversely, as we will see in the next section, even institutions which appear exclusively suited to the moden, centralized factory have played a part in the organization of what, viewed from afar, looks like a traditional form of industry.

The Union Role

Where the importance of the family and artisanal traditions in the operation of the Italian small firm sector is easily overestimated, the role of the trade unions is easily underestimated or distorted. That role is complex and contradictory, but it seems that on balance the trade unions have contributed to the success of the most modern small firms, above all in areas like Emilia-Romagna.

From what has been said so far it seems that the union's contribution to the creation of the small firms was at best indirect, not to say inadvertent or

unwilling. The unions endorsed and at times encouraged the rank and file pressure for shop floor control over the organization of production in the large plants. They thus became a major responsibility for the strategy of rigidification, which in turn provoked the creation and expansion of many small firms. It is not surprising, therefore, that the unions opposed efforts to evade the new rules through decentralization to smaller units.

But while the unions were hardly enthusiastic about these developments in the early 1970's, and are just now coming to consider in a detailed way the possible advantages of development on the Emilian model, their opposition to decentralization was and continues to be restrained. In some areas, in fact, the left moved from forebearance to encouragement and promotion of the modern small firms at the expense of the sweatshops. For instance, as we saw, in Bologna and Modena many of the small machine shops are housed in industrial parks built and financed by Communist municipal governments. And these same governments use their control overzoning regulations to shut down hazardous foundaries. What explains the unexpected restraint? What makes possible the still more improbably collaboration?

Ultimately the labor movement's restraint is rooted in the deference of Communist-Socialist trade unions to the PCI, and particularly to the Party's analysis of modern Italian plitics. Central to that interpretation is the view that the success of facism was in large measure the result of the isolation of the workers from other social classes oppressed by the evolution of monopoly capitalism especially the peasants and petit bourgeoise. The keystone of the party's postwar electoral strategy was thus the attempt to win over these groups which had provided the foundations of Mussilini's political support. [22] Any

effort to impose upon the small productive units either by law or through union organization conditions equivalent to those of the large factories would have jeopardized the future of this strategic alliance, dangerously antagonizing a group which, the left feels, must be neutralized if it cannot be rallied to transformative causes.

In those areas where the labor movement has begun to collaborate, however judiciously, with the small firms, it has done so partly out of strategic calculation and partly out of historical ties between the left and particular groups of entrepreneurs. Calculation for example, encouraged the municipal governments to build industrial parks as demonstrations of their capacity to build a modern, urban environment. The labor movement's loyalty to some of the small employers in Emilia-Romagna and elsewhere grows out of an irony of history to which we referred earlier: some of the small employers began as skilled workers, part of the group which formed the core of the anti-fascist underground during World War Two and fell victim to the purges of the organized left in the factories in the 1950's. The connection between the labor movement and the entrepreneurs, moreover, is constantly being renewed because the tradition of union organization among skilled workers has meant that some craftsmen have moved up to start their own firms in recent years.

But by themselves neither strategic calculations nor historical loyalties fully explain why small shop owners frequently belong to asociations which bargain with the trade unions and respect many union standards, and this although the workers are not always union members or have sometimes joined at the employers urging. In fact, on closer inspection it turns out that traditional

allegiances are more the catalyst than the underlying cause of the spread of union influence to firms in which the union is not officially represented.

One way to make sense of the apparent paradox of union standards sustained as much or more by employer pressure than worker organization is to look at them in the light of what is known of dispersed but unionized industries in the United States such as garments, trucking and construction. For it seems likely that Italian developments are probably shaped by the same two forces at work there.

First, because there are in these industries a number of small firms competing with each other for small orders and prices are constantly being regenerated, entry is fairly easy and labor is relatively high proportionate to total cost. The situation is very unstable and there is always the potential for cut-throat competition which will result in the severe exploitation of the labor force. Hence, there is a strong incentive to employers to support any measure which stabilizes the conditions in the industry and narrows the range of variables where competition takes place. But, second, the employers' interest in this stability is largely as a group in the long run. In the short run, any particular employer may have an individual interest in undercutting union standards, particularly if he is hard pressed to survive. And, of course, if one employer breaks ranks, all follow suit, since even the most efficient enterprise cannot afford to respect union standards if his competitors are undercutting him. Thus, employers want the union, but only if it is strong enough to control the whole industry.

Given this rather delicate balance of economic interests on the employers side, ideological and tempermental factors which contribute to the union's strength become crucially important. For example, employees who start out as

craftsmen and continue to workside by side with their employers, maintaining close personal contact and a natural sympathy with them, are often reluctant to survive through labor exploitation and the violation of union rules. Shared craft experiences also help maintain the cohesion among the employers themselves. Respect for labor standards is fostered not only out of loyalty to the work force but also out of loyalty to other members of the employer group.

Even these kinds of bounds, however, are not always enough, and unions seem to survive best in those situations where there is some other factor which links workers and employers. In the New York City garment industry, that bond has been common ethnicity, and one result of the United Jewish Appeal and Italian orphanage campaigns in which the union and management organizations cooperate is to cement the sentiments of the industry's stability. In the factories which we visited in central Italy the common adherence of the employers and workers to the left wing parties and ideology seems to perform a similar function. So does the complicated web of kinship which links the two groups in any small community: in Emilia-Romagna most workers seem to have an entrepreneur somewhere in the family.

Still, even in those areas where it has gone farthest towards cooperating with the small firms, the left has no coherent policy regarding decentralization. The left's support and control within the small scale industrial sector has meant that the conflict between the interest of the workers in the small and the large firms, which might have been played out as a conflict between organized and unorganized workers or between the left and right wing parties has become a conflict within the left wing itself. The rule has been that the PCI defends the artisans out of fear of offending them and the hope of gaining from alliance,

while the unions try to curb the abuses in the small shops. Coordinated action between the PCI and the unions is possible only in extreme cases: for example, closing extremely hazardous plants. Both unions and the party, furthermore, remain suspicious of a form of industry so apparently at odds with their visions of modern, centralized rationality. The FIAT Mira Fiore works in Turin have long been their image of the factory of the future. [23] Nonetheless, the explosive growth of the small scale sector and the growing widely recognized need to raise national productivity levels to international standards, are gradually forcing the labor movement as a whole to think through the politics and economics of their de facto cooperation with the small firms, slowly moving it to endorse what we called the second interpretation of Italian developments, and to look at ways of further integrating labor and the new firms.

In the last section we saw that Italy's family and artisanal traditions were not indispensible to the creation of a sector of small scale industry. In this one we saw that the unions are not necessarily inimical to it. The final two sections connect these conclusions to the two earlier interpretations of decentralization in an effort to draw out the meaning of Italian experience for American debates on industrial policy.

Italian Decentralization and American Industry

Despite their differences, implications of both the interpretations of Italian experience presented earlier ought to be sobering for American policy makers. In fact, viewed in relation to the significance for industrial strategy in this country, the difference between the two understandings of Italy is one of kind not degree. The first, dualist explanation suggests that American policy is

needlessly wasteful; the second, more radical reading of changes in labor and product markets suggests that current thinking on industrial structure is potentially disasterous.

On the first view, Italian developments seem broadly consistent with much current economic policy in the United States, and especially the massive relocation of industry from the North to the South. Here, as among many Italian industrialists, it is widely believed that free markets are natural, self-defining entities; that managers must be given a completely free hand if they are to manage efficiently; that taxes and unions distort correct decisions; and that the future is with the large factory. From this point of view the major difference between Italy and the United States is just this: where the Italians have been foced for political and geographic reasons to settle for piecemeal decentralization to the politically protected artisanal sector, the Americans are able to rebuild a major portion of their industrial base in the South, in the bargain putting extreme pressure on Northern unions to make concessions.

This fundamental agreement, however, obscures an important aspect of the dualist lesson of Italy: as the success of the new small firms shows, there is a fringe of demand which flexible specialty firms can profitably capture. To abandon the Northeast with its patrimony of skills, entrepreneurship and experience in international markets maybe to forfeit the possibility of competing in those markets. So even if a large part of the future lies with the large factory, it is wasteful to reject out of hand the possibility that some of our older industrial areas maybe suited to the kind of peripheral production which, on this interpretation, is making the Third Italy rich. If the future does not lie with large firms, of course, the picture of our future looks much worse.

The first implication of the radical view of Italian developments for the United States is that the policy of industrial displacement toward the South and Southwest is simply not viable in the long run. The policy appears viable today because it is able to draw upon the inexperienced labor reserves in those areas. The availability of these workers creates a favorable political climate and an attractive set of attitudes toward work in general and unions in particular, but this, in the Europeans' interpretation of their own experiences, is basically a biproduct of the novelty of industrial work. In the future (which the suddenneses with which labor unrest broke out abroad suggests may be a good deal closer to the present than anyone now suspects), as that novelty wears off, the newly industrialized states will impose much the same restrictions as the old. And if these restrictions are truly as crippling as industrial managers seem to believe, large scale production will, in turn, move out of these areas and locate abroad where, with lower labor costs and less troublesome unions, the same technology can be used to produce the same goods at lower costs.

The second major implication of this view of Italian developments is that the current neglect of the established industrial lives in the United States is likely to prove extremely costly. In the present climate, almost any attempt to aid the run down industrial cities in the Northeast and Midwest is written off as, at best, a confused effort to save "places, not people." [24] But in Italy, where one village specializes in ceramic tiles, the next in small tractors, the next in numerically controlled lathes, places define people as much as the reverse: some kinds of business can only be done in certain places. And if the success of the small Italian firms is any guide to the precondition of success in the international economy of the future, then the accumulation of skills,

knowledge of existing markets, and habits of dealing with a mass of subcontractors and suppliers which are the partrimony of these ailing regions are also the foundations of succesesful competition in the specialized markets to come. If the strategy of rejuvinated mass production fails in the South and the basis of specialized production is destroyed in the North, what industry will we have left?

Fortunately, even if this second perspective is correct, the long run prospects for the United States are not as bleak as they seem. For if economic policy is a good deal more important in determining outcomes than most of us seem to believe, it is also true that even the best program seldom succeeds as planned, most wrong-headed one is rarely as disasterous, as might be expected. There is always some room for firms and individuals to play on economic currents running underneath the surface of events and so to produce outcomes which policy

by design or neglect would foreclose. And to the extent that some of the same forces which led to the flowering of small businesses in central Italy operate in the old industrial regions of own country, these regions will not simply atrophy as national policy makers have prescribed. By a cheerless paradox, market forces may offer us some limited protection against the advocates of the market.

Industrial New England and the mid-Atlantic States have in fact begun to show an economic resilience which, while perhaps not equivalent to that of central Italy, is nonetheless similarily surprising. [25] After several decades of secular decline and a period, from the late sixties to the mid seventies, seventies when unemployment rates were substantially above the national average, manufacturing employment in these regions appears to have stabilized. In a

number of industries such as special machines, metal fabrication, knit goods, and even (in New Hampshire) textiles, employment increases sharply between 1975 and 1980. The recession of last year almost bipassed the area: unemployment in Southern New England remained steady despite sharp rises in the national level, and in the Middle Atlantic states the increase was extremely mild compared to the past two recessions which seeemed centered there. In March, 1981, unemployment was 5.8 percent, the lowest for any industrial state except Texas. [26]

This reversal of past trends, is still so recent and so startling that it has yet to be carefully examined and explained, but fragmentary evidence--much of it annedotal--suggests that what is being played out here are precisely those trends in international capitalistic development which underlie recent Italian developments. The seventies did indeed see a reaction of industry to the shop floor practices and general social and political climate generated by an experienced, resourceful, and noncompliant industrial labor force, as well as a migration of industrial jobs out of the regin to more "hospital" sections of the country or less developed countries abroad. But what moved out was the standardized industrial production, the long runs of traditional industrial products and mass consumer goods. That movement has now been completed, and what remains are specialty items, innovative products and new industry, high fashion production, and perhaps, the overflow of standard industrial items which will not sustain a commitment to permanent industrial facilities, the segments of demand, in other words, where the region's skilled industrial labor force working in a small shops, directed by entrepreneurs with a keen sense of the shifting markets and eager to innovate in fashion and technology, located at the modal points of transportation and communication but also of fashion and of scientific and

engineering scholarship have, like that in northern Italy, a particular advantage.

Typical in this respect is the ladies' garment industry. Once virtually the whole industry was located in New York City. But in the postwar period, the City had a steady leakage of employment, to rural areas of New York State and Pennsylvania and to the Southern states and Puerto Rico. In much of the 1970's, there was a further transfer of employment opportunities to low wage countries in Latin America and, particularly, in Asia. Most of what left the City, however, was the mass production of standardized items, blue jeans, bras, panties, and the like, for which it paid to breakdown the garment into sections and put it together in assembly-line fashion with unskilled operators repeating the same operations again and again on special machinery adapted with jigs and fixtures to the particular production item. This movement was hightened in the late 1960's and early 1970's by a shift in fashion toward informal leisure type goods and sportswear, the demand for which was less fickle in the very short run and which, therefore, expanded the portion of output which lent itself to assembly type production in facilities somewhat removed from the fashion center. Forsome time, it has been axiomatic in certain circles that the life of the garment industry in New York was limited.

But, in fact, there was a segment of the industry which was not moving. Part of that segment is composed of high fashion items, the very top of every line, the haute couture items sold in small numbers for the very rich who set the style for the mass industry, but also mass consumption items in which design and fashion are important and which, therefore, must be produced in small lots and quickly, before the fashion changes. Most dress production, for example,

remained behind. As one manufacturer put it, "If I tried to make it in South Carolina, before I could ship out the design and ship back the product, the style would have changed." But, it is also true that given the numbers in which any given dress is produced, it does not pay to set up an assembly line, breakdown the garment, specialize the equipment and teach green operators how to do a particular stitch. Dresses are produced in small shops by operators who stitch the whole garment on general purpose sewing machines. What is true of the dress industry as a whole, moreover, is true of a portion of every other segment---even these days blue jeans--has a high fashion component: but also because even for standardized items, the business must be close to a fashion center and this generally implies that a piece of the production process must be located there too. One executive with extensive facilities in the rural South made ths point as follows: "I am not going to sit in Greenville: this is where my customers are and this is where my designers can feel the trends in air and this is where I have got to be and that means I have got to start the garment and work it out in some shop in Manhatten where if the belt doesn't sit right on the coat, they can get in a cab and bring it up here in fifteen minutes. You can't have 200 women waiting at their machines, while I fly down to Greenville, Mississippi to find out we need to take another stitch in the waist."

By the late 1970's, it was this core segment of the industry which was specially, and uniquely adopted to the urban industrial environment of the City that remained. This explains why employment has stabilized in the industry. Employment prospects have been strengthened by fashion shifts, which have introduced a greater element of flux and uncertainty into sportswear design so that a portion of this production is moving back to the City as well. As risk

and fashion shift overtime, garment employment in New York will no doubt continue to vary as well. But the trend has stabilized. What appeared to be a long term decline was a structural adjustment which has now run its course: what remains draws on the natural strengths of the city as a commercial and industrial community.

What is true of the garment industry in New York City is probably true of a number of other industries as well. Thus, the whole string of industrial towns running up the Connecticut Valley from Bridgeport through New Haven and Hartford up to Springfield, Massachusetts and east to Worchester contain specialty machine shops, machinists and machine tool manufacturers which once composed the American machine building industry. Long runs of standardized machine tools and equipment may no longer be profitable in this area, but the area has the same potential for capturing specialty markets, prototype production, and innovation as do the machine shops in Bologna. The resurgence of this potential, as the locational redistribution of mass production comes to completion probably explains the stabilization of employment trends here too. Still another example of a similar phenomena is high technology in Eastern Massachusetts, a new industry with a very high rate of innovation, which operates like fashion does in garments of specialty production in machne tools, to place a primium on skilled labor force, relatively small scale, flexible production techniques, entrepreneurship and a location as an urban modal point (in this case the university community around Boston). Again, the phenomenon is not new: the Bostn area has been spinning off small entrepreneurial firms and spawning new technologies for the last three decades: some of them, like Polaroid, are now major industrial producers. But, again, it is only as the long term locational changes in mass production

industries run their course that these developments in industries where the area retains a natural advantage have been able to dominate economic indices and employment trends.

If, however, one can find traces of the forces generating the Italian model in U.S. development in recent years, one cannot count on these forces to sustain these developments unassisted, let alone to reproduce the miracle of central Italy in New York or New England. The natural advantages of the older industrial regions maywell sustain them against industrially underdeveloped areas such as the South and Southwest, but it will not protect them from other equally mature urban economies. It is improbable that Atlanta or Los Angeles--let alone Greenville, Mississippi--will ever displace New York as a garment center; but Milan might well be able to do so. It is difficult to imagine Houston, Texas capturing the markets of Bridgeport, Connecticut or Worchester, Massachusetts; but Modena and Bologna are in very good positions to compete with those cities. They are probably less well placed to compete with Boston for the innovative high tech markets but there are cities in Germany, Great Britain, France and Japan which have a scholarly tradition and industrial maturity which could well mount such a competitive threat. The innovations in communications and transportation wrought by the airplane and the computer do not enable a designer sitting in New York to rearrange the belt on a dress in Greenville, Mississippi. The cognative processes and human interactions involved in fashion, technical innovation, and precision design may be such that urban conglomerations will always have a commanding edge in these activities. But computer and air technologies do permit the very rapid communication and transportation of finished output once production is complete. For the specialty items in which urban centers have a

productive advantage, the quality of the products, measured in terms of the degree of innovation, its fashion content, or its efficiency in the particular specialty for what it is designed, tend to dominate cost considerations. In competition along these dimensions, it is easy to see American industry losing out to products produced abroad and shipped. A case directly in point is the competition between New England and central Italy in the shoe industry.

New England was once the center of the U.S. shoe industry in very much the same sense that New York City was the garment industry center, and shoe production, like garments, has moved south in the postwar decades. But the movement in shoes went much farther than in garments and the result is that the U.S. industry has lost the high fashion end of the business, largely to the very small Italian firms discussed earlier in this paper. The conventional wisdom is that the competitive advantage of these firms is low wages but, as we have seen, the conventional wisdom is wrong: the advantage is precisely the skill and conglomeration which were once possessed by New England.

American Industrial Policy

What does this imply for public policy? The first, and most obvious, implication is a reversal of the current policy of abandonment in the North, and the acceptance of public responsibilities in this region of the country. Given the strains placed upon local and state fiscal systems by the Southern movement of mass production, this means the provision of precisely the kinds of Federal aid which the Reagan administration; is attempting to withdraw. Of particular concern is the deterioration of the infrastructure of roads, bridges, sewer systems, public transportation and the like which hold urban conglomerations together and make them viable places to live and produce. The role of government

is of paramount importance because the facilities are public: they are widely shared and no single firm or industry has the resources or incentive to provide them, if government does not. This is especially true in an area whose economy is composed of a network of small firms. Many of the mass production facilities opening in the South and Southwest are so large relative to the communities into which they are moving that they might provide facilities which elsehwere are publicly provided. This is clearly not the case in the North. Conceptually one might distinguish this kind of hard governmental activity from social programs, which do not directly sustain business activity. But to the extent that local governments are forced by commanding political pressure to compensate for declining Federal support in social programs with money diverted from other budgets, Federal efforts to divert funds from social programs to capital outlays are likely to be self-defeating. The pressures for social programs in the older areas are, it is worth noting, a product of their own industrial maturity. The same community, religious and family structures of the South and Southwest which generate a pliant industrial labor force also provides many of the support services which elsewhere depend upon government.

In the end, however, the commitment of public resources may not be sufficient to sustain the small enterprise sector of the American economy in world markets. We seem to lack intellectual categories in which to conceive of this form of business activity and to fashion policies which are likely to foster its development. These conceptual problems, moreover, reflect a structure of business institutions which makes the existence of the type of firms which seems to prosper in the Third Italy very problematic.

In the United States, we really have two distinct, almost opposite categories in which we understand businessmen and evaluate the activities in which they are engaged. One is the independent small businessman--a kind of courageous entrepreneur striking out on his own in some kind of daring new enterprise; Schumpater's innovating enterpreneur, an Horatio Alger or Andrew Carnagie, the economic equivalent of the Lone Ranger. It is in these terms that the Western businessmen surrounding President Reagan seem to conceive of themselves. The second business image is the corporate executive working his way through a bureaucratic succession in a large corporation, through cooperation and team work. (The cooperation, however, is supposed to stop at the organization's boundaries: a hostile, competitive external environment ensures that internal cooperation works toward efficient solutions to economic problems). The second model of internal organizational cooperation has recently been reinforced by admiring descriptions of successful Japanese firms.

The kinds of small business which have been so successful in Italy however, involve a mixture of entrepreneurship and cooperation which fits neither of these models of business activity. It involves entrepreneurship in the sense that the small firms need to be continually on the look out for new markets, jumping from one innovation to another, anticipating the rapid changes in taste and style; lean and versatile; always ready to drop one project and take on another. But, as it developed in Italy it involves a good deal of cooperation as well. Part of that cooperation is, in terms of American categories of though, perfectly benign, (although in terms of the two types of businesses just outlined, such cooperation is not really recognized): cooperatives for the purchase of raw materials; for the provision of capital; to recruit labor; to build the

industrial parks where the businesses are lodged, and the like. Other forms of cooperation, if not actually excluded by our models, are extremely suspicious. Many of the small firms in Italy, for example, subcontract among each other. Some of the subcontacting firms are obviously complimentary; but a number of other subcontracts have the outward trappings of sweatheart deals. Very often in the garment or shoe industry, for example, two firms will compete with each other for an order and, then, the winner will turn around and subcontract to the looser. It is difficult in our terms to understand how competitors can cooperate with each other in this way; and yet it would be impossible for them to accept the risks of a high fashion environment without the security which such fallback arrangements permit. Some of the cooperation among small firms is completely foreclosed by the normative models built upon our two business categories. Arrangements to fix wages through top down union organization or to fix material prices through buying cooperatives which stabilize the market are, for example, viewed as a monopolistic restraint upon trade, although they may well be necessary to ensure that the firms compete on the basis of product innovation and not on the basis of cost cutting and labor exploitation.

Nonetheless, however important the cooperation among these small firms they do require real entrepreneurship as well. The entrepreneurship, moreover, is continuous, it is not sufficient to invent one new product or create one successful style. These industrial sectors survive by continual radical adjustment. In the United States, we pride ourself on our business entrepreneurship, but it is not clear that it is the continuous entrepreneurship required to sustain small scale production in the long run.

The succesesion in small businesses from father to son is, in the United

States, particularly problematic. The two types of business activity--the independent entrepreneur and the bureaucratic corporation--actually dovetail here in a manner which, from the point of view of a continuation of the entrepreneurial tradition, is not idea. The key institutions mediating the relationship are the conglomerate corporation and the business school. A typical pattern is one in which the first generation entrepreneur has relatively little formal education; often he comes from an immigrant backgrround: the son, who follows him into the business, however, goes to business school. He develops there contact and identification with other students who go directly into large corporations. The entrepreneurial son returns upon graduation to his father's business but not with the ambition of continuing it for life. Instead, he attempts to build up the net worth of the corporation (and, hence, therefore of the family which controls it) in the short run and, at the same time, develop a market position which, from the point of view of a major corporation, is strategic, i.e., a particular product innovation, a process patent; a specially advantageous sales location, or the like. In midcareer, this second generation entrepreneur then plans to sell out his business to a larger corporation, moving with it as an employee into the corporate hierarchy. Very often the corporation having brought the whole of the business closes down a number of activities which may have been viable as part of the small scale sector but which cannot in a large organization be oriented to mass markets and run in a more regimented bureaucratic fashion.

The problem then is really twofold: to develop a category of businesses which corresponds to the real requirements of small scale production and to find ways of populating that category on a continuing basis. Italians, of course, did

not start with a solution to this problem. They have built it, we saw, from a variety of materials: artisanal and family traditions as well as the peculiar history of left wing politics which married entrepreneurial craftsmen with the left wing notions of community and cooperation. Are comparable materials available in American economic history and iconography? The closest equivalent is the family farm and the network of support services built around the agricultural extension service of the Federal government and the range. These institutions have an honored, even hallowed, place in American political discourse. Less honored but probably a good deal more relevant is the network of labor and management organizations which have controlled work practices and production techniques in the garment and construction industries. We have seen some possibilities for cooperation between the advanced small firms and labor in Italy which are being explored in Italy, and the parallels between the organization of industry in the American Northeast and the Third Italy. Could labor movement become in the United States, as it has in some regions in Italy, the folcrum for a new industrial development strategy?

APPENDIX I

Table Ia

GROWTH OF GDP

percent change, annually, volume, seasonally adjusted

Major EEC Countries	Average 1968-1978	1979	1980
Italy	3.4	5.0	3.8[a]
Germany	3.5	4.5	1.8
France	4.4	3.2	1.8[a]
United Kingdom	2.3	1.0	-1.9[a]
Other Countries			
United States	2.9	3.2	-0.1
Japan	6.6	5.9	5.5[a]
Austria	4.4	5.1	2.6[a]

Source: OECD, Main Economic Indicators, National Sources, NIESR estimates.
a) estimate

Table Ib

CONSUMER PRICES AND GNP/GDP DEFLATORS[a]

percent changes

	Average 1968-1978		From Previous years 1979		1980	
	CPI	GNP/GDP Deflator	CPI	GNP/GDP Deflator	CPI	GNP/GDP Deflator
Major EEC Countries						
Italy	11.8	12.2	14.8	15.2	20 3/4	19
Germany[b]	4.8	5.5	3.9	3.8	5 3/4	4 3/4
France	8.2	8.5	10.9	10.3	13 3/4	11 1/4
United Kingdom[b]	11.4	11.7	12.1	14.6	15 1/2	19 1/4
Other Countries						
United States[b]	5.9	6.2	8.9	8.8	10 1/2	9 1/2
Japan[b]	8.4	7.4	3.1	2.0	6 1/4	2
Austria[b]	5.8	5.9	4.2	4.0	6 1/4	4 1/4

Source: OECD, Economic Outlook 28, December, 1980
a) aggregates were computed on the basis of 1979 values expressed in 1979 in U.S. dollars.
b) national accounts implicit private consumption deflator instead of consumer price index.

Table Ic

percent of total labor force, seasonally adjusted

	Average 1964-1973	1974-1979	1979	1980[a]
Major EEC Countries				
Italy	5.5	6.6	7.5	7.5
Germany[b]	0.8	3.2	3.2	3.3
France[b]	2.2	4.5	5.9	6.3
United Kingdom[b]	3.1	5.1	5.8	7.4
Other Countries				
United States	4.4	6.6	5.7	7.0
Japan	1.2	1.9	2.1	2.0
Austria[c]	2.2	1.9	2.0	n/a

Source: OECD, Economic Outlook 28, December 1980, and NIESR estimates
a) NIESR estimates
b) adjusted to international definitions by OECD
c) national definition, % of total labor force, registered unemployed

Table Id

PRODUCTIVITY, TOTAL ECONOMY

percent changes, seasonally adjusted at annual rates

	Average 1963-1973	1973-1981[a]	From Previous Year 1979	1980
Major EEC Countries				
Italy	5.4	2.1	3.8	2.5
Germany	4.6	2.9	3.2	1.0
France	4.6	2.6	3.4	1 3/4
United Kingdom[b]	3.0	1.5	1.2	0
Other Countries				
United States	1.9	0.2	-0.4	-1.0
Japan	8.7	3.8	4.5	4

Source: OECD, Economic Outlook 28, December 1980.
a) forecast values
b) GDP including North Sea oil

Table Ie

PRODUCTIVITY IN MANUFACTURING

annual percent change, output per hour

	1973-1979	1977-1978	1978-1979
Major EEC Countries			
Italy	3.7	3.1	9.3
Germany	5.3	3.6	5.2
France	4.8	4.9	4.7
United Kingdom	.5	1.2	1.7
Other Countries			
United States	1.4	0.4	0.8
Japan	6.9	6.8	8.1

Statistics, Monthly Labor Review, December 1980.

APPENDIX I

Table Ia

GROWTH OF GDP

percent change, annually, volume, seasonally adjusted

Major EEC Countries	Average 1968-1978	1979	1980
Italy	3.4	5.0	3.8[a]
Germany	3.5	4.5	1.8
France	4.4	3.2	1.8[a]
United Kingdom	2.3	1.0	-1.9[a]
Other Countries			
United States	2.9	3.2	-0.1
Japan	6.6	5.9	5.5[a]
Austria	4.4	5.1	2.6[a]

Source: OECD, Main Economic Indicators, National Sources, NIESR estimates.
a) estimate

Table Ib

CONSUMER PRICES AND GNP/GDP DEFLATORS[a]

percent changes

	Average 1968-1978		From Previous years 1979		1980	
	CPI	GNP/GDP Deflator	CPI	GNP/GDP Deflator	CPI	GNP/GDP Deflator
Major EEC Countries						
Italy	11.8	12.2	14.8	15.2	20 3/4	19
Germany[b]	4.8	5.5	3.9	3.8	5 3/4	4 3/4
France	8.2	8.5	10.9	10.3	13 3/4	11 1/4
United Kingdom[b]	11.4	11.7	12.1	14.6	15 1/2	19 1/4
Other Countries						
United States[b]	5.9	6.2	8.9	8.8	10 1/2	9 1/2
Japan[b]	8.4	7.4	3.1	2.0	6 1/4	2
Austria[b]	5.8	5.9	4.2	4.0	6 1/4	4 1/4

Source: OECD, Economic Outlook 28, December, 1980
a) aggregates were computed on the basis of 1979 values expressed in 1979 in U.S. dollars.
b) national accounts implicit private consumption deflator instead of consumer price index.

Table Ic

	percent of total labor force, seasonally adjusted			
	Average 1964-1973	1974-1979	1979	1980[a]
Major EEC Countries				
Italy	5.5	6.6	7.5	7.5
Germany[b]	0.8	3.2	3.2	3.3
France[b]	2.2	4.5	5.9	6.3
United Kingdom[b]	3.1	5.1	5.8	7.4
Other Countries				
United States	4.4	6.6	5.7	7.0
Japan	1.2	1.9	2.1	2.0
Austria[c]	2.2	1.9	2.0	n/a

Source: OECD, Economic Outlook 28, December 1980, and NIESR estimates
a) NIESR estimates
b) adjusted to international definitions by OECD
c) national definition, % of total labor force, registered unemployed

Table Id

	PRODUCTIVITY, TOTAL ECONOMY percent changes, seasonally adjusted at annual rates			
	Average 1963-1973	1973-1981[a]	From Previous Year 1979	1980
Major EEC Countries				
Italy	5.4	2.1	3.8	2.5
Germany	4.6	2.9	3.2	1.0
France	4.6	2.6	3.4	1 3/4
United Kingdom[b]	3.0	1.5	1.2	0
Other Countries				
United States	1.9	0.2	-0.4	-1.0
Japan	8.7	3.8	4.5	4

Source: OECD, Economic Outlook 28, December 1980.
a) forecast values
b) GDP including North Sea oil

Table Ie

PRODUCTIVITY IN MANUFACTURING

annual percent change, output per hour

	1973-1979	1977-1978	1978-1979
Major EEC Countries			
Italy	3.7	3.1	9.3
Germany	5.3	3.6	5.2
France	4.8	4.9	4.7
United Kingdom	.5	1.2	1.7
Other Countries			
United States	1.4	0.4	0.8
Japan	6.9	6.8	8.1

Source: U.S. Bureau of Labor Statistics, Monthly Labor Review, December 1980.

Table If

CURRENT BALANCES

$ billion; seasonally adjusted, expressed at annual rates

	1977	1978	1979	1980
Major EEC Countries				
Italy	2.5	6.2	5.1	-5 1/4
Germany	4.2	8.7	-5.1	-17 1/4
France	-3.0	-3.7	1.2	-7 3/4
United Kingdom	-0.5	1.2	-3.9	4.5
Other Countries				
United States	-14.1	-14.3	-0.8	5 1/2
Japan	10.9	16.5	-8.8	-13 1/4
Austria	-3.0	-1.4	-1.8	-4.2

Source: OECD, Economic Outlook 28, December 1980.

APPENDIX II

Table IIa

UNEMPLOYMENT RATES IN SELECTED NEW ENGLAND AND MID-ATLANTIC STATES
1968 - 1981

State	1981[1]	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969[2]	1968[2]
MA	6.4	5.6	5.5	6.1	8.1	9.5	11.2	7.2	6.7	6.4	6.6	5.3	3.9	4.1
CT	6.8	5.9	5.1	5.2	7.0	9.5	9.1	6.2	5.7	8.2	8.9	5.6	3.8	3.7
NH	5.2	4.7	3.1	3.8	5.9	6.4	9.0	4.8	3.9	4.5	4.7	3.3	2.9	1.8
RI	8.7	7.2	6.6	6.6	8.6	8.1	11.2	7.1	6.2	6.5	6.8	5.2	3.6	3.6
NJ	7.7	7.2	6.9	7.2	9.4	10.4	10.2	6.9	5.6	5.8	5.7	4.6	4.4	4.5
NY	8.2	7.6	7.1	7.7	9.1	10.3	9.5	6.3	5.4	6.7	6.6	4.5	3.5	3.5
NYC	9.4	8.6	8.7	8.9	10.8	11.1	10.6[3]		6.0	7.0	6.7	4.8	3.6	3.1
U.S.	7.3	7.1	5.8	6.0	7.0	7.7	8.5	5.6	4.9	5.6	5.9	4.9	3.5	3.6

1. February, 1981
2. 1969 and 1968 rates not comprable to 1970-81 series
3. 1968-1973 rates not comprable to 1975-1981

Source: 1979-1981: Bureau of Labor Statistics, Employment earnings 1981
1975-1978: Bureau of Labor Statistics, Labor Statistics Handbook 1980
1970-1974: President's Manpower Report 1975, (consistent with BLS figures)

Table IIb

UNEMPLOYMENT RATIOS, SELECTED NEW ENGLAND AND MID-ATLANTIC STATES TO U.S.
1968-1981

State	1981[1]	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970[2]	1969[2]	1968[2]
MA	.88	.79	.95	1.01	1.16	1.23	1.32	1.29	1.37	1.14	1.12	1.08	1.11	1.14
CT	.93	.83	.88	.87	1.00	1.23	1.07	1.11	1.16	1.46	1.51	1.14	1.09	1.03
NH	.71	.66	.53	.63	.84	.83	1.06	.86	.80	.80	.80	.67	.83	.50
RI	1.19	1.01	1.14	1.10	1.23	1.05	1.32	1.27	1.27	1.16	1.15	1.08	1.03	1.00
NJ	1.05	1.01	1.19	1.20	1.34	1.35	1.20	1.123	1.14	1.04	.97	.94	1.26	1.25
NY	1.12	1.07	1.22	1.28	1.30	1.34	1.12	1.13	1.10	1.20	1.12	.92	1.00	.97
NYC	1.28	1.21	1.50	1.48	1.54	1.44	1.25[3]		1.22[3]	1.25	1.14	.98	1.03	.86

1. February 1981
2. 1969 and 1968 ratios not comparable to 1970-1981 series
3. 1968-1973 rates not comparable to 1975-1981

Source: 1979-1981: Bureau of Labor Statistics, Employment and Earnings 1981
1975-1978: Bureau of Labor Statistics, Labor Statistics Handbook 1980
1970-1974: President's Manpower Report 1975 (consistent with BLS figures)
1968-1969: President's Manpower Report 1974

Table IIc

NONAGRICULTURAL EMPLOYMENT DECLINE DURING RECESSIONS, NEW ENGLAND and the UNITED STATES, percentage decline

Recession Years	Percentage Decline		Ratio of New England to U.S.
	United States	New England	
1960 - 61	2.3	1.1	0.48
1969 - 70	1.4	3.1	2.21
1973 - 75	2.9	4.3	1.48
1979 - 81	1.3	1.8	1.38

Source: Richard Syron, "Regional Experience During Business Cycles," New England Economic Review, Nov. - Dec. 1978.

Updated by the Federal Reserve Bank of Boston

Table IId

MASSACHUSETETS EMPLOYMENT IN HIGH TECHNOLOGY[1]

	1979	1978	1977	1976	1975
High Tech employment (thousands)	222.0	206.4	190.8	172.8	167.6
Total manufacturing (thousands)	671.7	652.9	618.3	595.2	577.6
Ratio High Tech to Total Manufacturing	33.0%	31.6%	30.9%	29.0%	29.0%
Ratio MA High Tech to U.S. High Tech	6.5%	6.4%	6.3%	6.1%	6.1%

1. High Tech employment defined as employment in 20 SIC code industry groups: Drugs (SIC 283); Ordanace and Accessories, NEC (SIC 348); Office Computing and Accounting Machine (SIC 357); Electrical and Electronic Machinery, Equipment and Supplies (SIC 361-367, 369); Guided Missiles and Space Vehicles and Parts (SIC 376); Miscellaneous Transportation Equipment (SIC 379); Measuring, Analysing, and Controlling Instrument, photographic, medical, and optical goods; watches and clocks (SIC 381-387).

Source: MA Department of Employment Security, High Technology Employment in Massachusetts and Selected States, 1980.

Table IIe

Employment in some Manufacturing Industries in Selected New England and Mid Atlantic States, 1972-1979

Massachusetts

Employment in Thousands

Source: Board of Labor Statistics Employment and Earnings, States and Areas

Industry	1979	1978	1977	1976	1975	1974	1973	1972
Manufacturing	670.3	652.4	621.0	539.6	577.8	639.3	634.7	610.2
Primary Metal Industries	17.5	17.1	16.9	16.1	15.5	17.3	16.2	14.0
Fabricated Metal Products	54.5	53.2	51.8	50.4	49.2	57.2	56.1	52.2
Cutlery, Hand Tools, & Hardware	13.1	13.3	12.8	12.7	12.3	14.4	13.5	12.6
Machinery, Except Electrical	100.3	90.4	82.0	74.0	74.0	78.5	73.1	66.0
Metalworking Machinery	17.6	16.4	15.4	14.4	14.6	16.1	14.6	12.9
Special Industry Machinery	17.6	16.4	16.1	15.7	16.1	17.7	16.6	15.1
Electric & Electric Equipment	104.1	98.3	91.0	83.8	82.8	93.7	88.1	81.6
Communication Equipment	29.7	28.1	25.0	24.1	28.6	28.5	26.8	26.9
Electronic Components & Accessories	44.1	39.4	35.8	30.5	27.0	32.7	30.1	25.6
Transportation Equipment	37.0	36.4	33.2	31.2	30.0	30.5	33.2	34.3
Instruments & Related Products	58.0	56.7	51.5	45.1	43.7	47.2	43.0	38.6
Textile Mill Products	27.2	28.2	27.9	27.7	25.2	28.7	31.1	31.0
Weaving Mills, Cotton & Synthetics	4.5	4.4	4.0	3.9	3.2	4.3	4.1	3.4
Weaving & Finishing Mills, Wool	2.4	2.4	2.3	2.3	1.9	2.3	2.9	3.2
Apparel & Other Textile Products	41.1	42.1	42.8	43.2	41.1	44.2	45.8	45.9

Table IIe.1

Employment in some Manufacturing Industries in Selected New England and Mid-Atlantic States, 1972-1979

Massachusetts

Employment in Thousands

Source: Board of Labor Statistics Employment and Earnings, States and Areas

Industry	1979	1978	1977	1976	1975	1974	1973	1972
Men's and Boys' Suits, Coats, & Furnishings	9.5	9.5	10.1	9.6	8.9	9.8	10.4	10.0
Women's and Children's Outerwear & Undergarments	21.4	22.0	22.1	22.5	21.2	22.5	22.8	23.3
Printing & Publishing	44.1	42.9	42.2	41.0	40.3	42.0	43.5	43.9
Rubber & Miscellaneous Plastics Products	33.0	32.1	30.3	29.6	27.8	33.7	34.6	32.2

Table 11f

Employment in some Manufacturing Industries in Selected New England and Mid-Atlantic States, 1972-1979

New York

Employment in Thousands

Source: Board of Labor Statistics Employment and Earnings, States and Areas

Industry	1979	1978	1977	1976	1975	1974	1973	1972
Manufacturing	1,498.9	1,481.2	1,459.6	1,438.9	1,421.9	1,574.6	1,619.1	1,602.2
Misc. Nonmetallic Mineral Products	13.5	12.9	12.3	12.0	11.4	13.6	14.3	13.5
Primary Metal Industries	58.5	56.6	57.8	58.6	57.9	69.7	70.0	63.7
Blast Furnace & Basic Steel Products	20.9	20.5	21.8	21.9	21.5	26.6	26.5	22.2
Iron & Steel Foundaries	9.4	9.2	9.3	8.9	9.1	10.0	10.0	9.8
Nonferrous Rolling and Drawing	14.6	13.6	13.8	14.8	14.8	17.9	18.1	17.4
Nonferrous Foundries	6.7	6.5	6.2	6.2	5.7	7.2	7.2	6.7
Fabricated Metal Products	84.5	84.2	80.9	78.5	77.5	88.7	91.0	90.0
Cutlery, Hand Tools & Hardware	11.4	11.8	11.3	11.1	10.8	12.7	12.5	11.9
Fabricated Structural Metal Products	23.2	22.5	22.2	22.4	23.6	26.4	26.7	27.1
Screw Machine Products, Bolts, Etc.	6.2	5.8	5.1	4.6	4.5	-	-	-
Metal Forgings and Stampings	16.0	16.1	15.5	14.4	13.1	15.6	16.5	15.7
Misc. Fabricated Metal Products	10.4	10.4	9.7	9.5	8.9	-	-	-
Machinery, Except Electrical	173.5	166.8	158.0	152.8	155.8	171.5	164.2	156.2
Engines and Turbines	17.7	18.5	18.4	17.7	17.6	18.5	18.6	18.3

Table 11f.1

Employment in some Manufacturing Industries in Selected New England and Mid-Atlantic States, 1972-1979

New York

Employment in Thousands

Source: Board of Labor Statistics Employment and Earnings, States and Areas

Industry	1979	1978	1977	1976	1975	1974	1973	1972
Construction & Related Machinery	8.4	8.0	7.4	7.3	8.2	9.5	9.2	8.5
Metalworking Machinery	20.9	19.9	18.6	17.3	17.6	20.5	19.2	17.5
Special Industry Machinery	14.1	13.5	12.7	12.3	12.5	13.5	13.4	12.9
General Industry Machinery	28.0	26.7	26.0	25.1	25.2	26.2	24.0	22.8
Office & Computing Machines	54.4	51.9	47.5	47.1	48.9	53.1	49.4	48.3
Household Appliances	6.0	5.8	5.5	5.0	4.9	5.6	6.2	6.3
Electric Lighting & Wiring Equipment	26.5	24.9	23.6	22.7	21.9	26.3	27.3	25.5
Communication Equipment	44.4	42.4	40.7	39.4	40.0	42.4	43.2	43.9
Electronic Components & Accessories	41.7	37.8	34.7	33.7	33.2	37.9	36.1	32.6
Refrigeration & Service Machinery	11.8	11.1	10.6	9.9	9.6	12.3	12.6	11.7

Table 11g

Employment in some Manufacturing Industries in Selected New England and Mid Atlantic States, 1972 1979

New Hampshire

Employment in Thousands

Source: Board of Labor Statistics Employment and Earnings, States and Areas

Industry	1979	1978	1977	1976	1975	1974	1973	1972
Manufacturing	116.0	109.8	101.4	94.5	85.1	94.2	96.0	90.8
Primary Metal Industries	3.3	2.8	2.5	2.5	2.4	2.9	2.8	2.5
Fabricated Metal Products	7.1	6.6	5.8	5.7	4.7	4.8	4.9	4.4
Machinery, Except Electrics	21.2	18.9	16.0	12.5	11.4	12.1	11.3	10.3
Electric & Electronic Equipment	18.5	16.6	15.5	14.9	13.0	14.8	14.9	13.2
Misc. Manufacturing Industries	1.9	1.9	1.7	1.6	1.5	1.6	1.5	1.5
Textile Mill Products	5.3	5.4	5.0	5.0	4.5	6.1	7.2	7.1
Apparel & Other Textile Products	2.8	3.1	3.3	3.2	2.7	2.7	2.7	2.6
Printing & Publishing	5.9	5.5	5.1	4.8	4.6	4.8	4.9	4.8

Table 11h

Employment in some Manufacturing Industries in Selected New England and Mid-Atlantic States, 1972-1979

Connecticut

Employment in Thousands

Source: Board of Labor Statistics Employment and Earnings, States and Areas

Industry	1979	1978	1977	1976	1975	1974	1973	1972
Manufacturing	435.1	419.6	406.7	397.0	389.8	430.9	420.2	400.1
Metallic Manufacturing	315.9	300.8	289.8	281.7	277.0	307.8	296.4	279.8
Primary Metal Industries	22.0	20.9	19.8	20.2	19.8	23.4	23.1	22.2
Fabricated Metal Products	66.8	65.5	62.9	62.1	61.3	70.2	68.5	65.8
Machinery, Except Electrical	60.7	58.8	58.4	55.4	56.5	60.2	57.1	52.6
Electric & Electronic Equipment	49.7	47.8	43.4	40.7	38.5	45.2	44.4	42.0
Transportation Equipment	84.2	75.0	74.2	73.4	72.9	78.3	74.7	69.3
Instruments & Related Products	24.0	24.0	22.4	21.8	20.5	21.5	19.7	18.7
Nonmetallic Manufacturing	119.2	118.8	116.9	115.3	112.8	123.1	123.8	120.3
Food and Kindred Products	12.6	12.6	12.3	12.5	11.8	12.1	12.5	12.7
Textile Mill Products	9.2	9.9	10.3	10.7	9.8	12.0	13.0	12.6
Apparel & Other Textile Products	11.5	12.0	11.4	11.7	11.2	11.9	12.9	12.9
Printing & Publishing	24.0	22.9	21.8	21.2	20.6	21.2	20.5	20.2

FOOTNOTES

1. For summary statistics on recent Italian economic performance, see Appendix I.
2. Bagnasco (1977).

3. These and subsequent observations on Emilia-Romagna are based on plant visits in the Spring of 1980 and 1981. Earlier studies of this area include Federazione Lavoratori Metalmeccanici (1975 and 1977), and Capecchi and Pugliese (1978).

4. The following is based on plant visits in February 1980. For an earlier study of this see U. Ascoli and A. Trento (1975).

5. Accordingly analysis of decentralization in the earlier 1970's focused on evasion of contractual and legislative controls, the use of antiquated machinery and more generally the retrograde character of small-scale production. See for example Frey (1973), and David and Pottario (1975). For a summary of this early literature see Livraghi (1977).

6. Berger and Piore (1980).

7. These remarks are based on interviews with machine designers in Emilia-Romagna in the Spring of 1980 and 1981. Russo (1980), is an excellent description of technological innovation in the small firms producing ceramic tiles. Another well documented example is the machine tool industry which combines technological sophistication and pronounced decentralization: in 1977, 40 percent of the Italians in the industry worked in firms employing up to 100 workers, compared to 12 percent in West Germany and 23 percent in the United States. Gaibisso (1980), p. 29. Italy is now the second largest producer of numerically controlled machine tools in Europe, after West Germany and well ahead of France and Great Britain. As of 1975, 20 percent of numerically-controlled machines in use in Italy were located in shops employing between 20 and 49 workers and their use in small firms was increasingly rapidly. See Rolfo (1980), pp. 126 - 129. For detailed evidence of the technological sophistication of the industry, see Tarento et al. (1979), pp. 163 - 187.

8. A good case study of the emergence and operation of the system of specialized, small scale production outlined in the next paragraphs is Lorenoni's (1979), account of the textile industry near Prato. See also Saba (1980).

9. Brusco (1975).

10. See for example Bagnasco and Pini (1981), Capecchi (1981).

11. See Piore (1979), for the general argument. Sabel (1982), discusses the Italian case in detail. Europeans, particularly if they are Marxist, accept the general form of the argument but put more emphasis on the rebellion of young workers (whose attitudes appear to be the product of capitalism itself) than on the reaction of peasant workers new to industrial work. See Coriat (1979).

12. Evidence for the growing importance of specialty markets in the long-term strategy of core industries in the advanced countries is presented in Sabel (1982).

13. Wage levels are reported in Bagnasco (1981), p. 105; investment and value-added per employer, p. 54; and unemployment rates, p. 92. All of these figures, as well as the league tables of provincial wealth, were compiled using ISTAT data from the appropriate years.

14. Butera (1980), p. 43; Coriat (1979), pp. 237 - 261; Altmann et. al. (1980).

15. See, for example, the discussion of the early history of Bolognese industry in Commune di Bologna (1980).

16. Berger and Piore (1980).

17. A good accounting of the legal advantages of the small firms is Ricolfi (1979).

18. This interpretation is developed most clearly in Pacci (1980).

19. These remarks are based on interviews with entrepreneurs in Emilia-Romagna, the Marche, and the Venetian provinces. Bagnasco comes to similar conclusions. Using data from a survey by Demoskopea in 1974, he found that in the province of Treviso, a center of decentralized production, 14 percent of entrepreneurs in the metal working sector were the sons of small or tenant farmers or agricultural day labors; 16.4 percent the sons of artisans; while the rest were the offspring of workers (21.8 percent), shopkeepers (18.8), white collar workers (10.9 percent) of high managers and professionals (11.7 percent). Bagnasco (1981), p. 30.

20. See on the history of the cooperative movement, Degl'Innocenti (1981).

21. See on the growing number of artisans in Emilia-Romagna (partly as a result of efforts to hire extra labors without exceeding the official limit of 15 full-time employees on firms qualifying for artisans' priviledges). Trevisani (1981). On the use of immigrants see Morelli (1980).

22. For the PCI's alliance strategy, see Hellman (1975).

23. These remarks are based on numerous discussions with officials of the metalworkers' union in Emilia-Romagna and Turin.

24. See, for example, President's Commission for a National Agenda for the Eighties (1980), especially pp. 71 - 86.

25. On the role of small business in the New England Renaissance see Birch (1980), and Brown and Hellman (1981).

26. For details on employment and output trends, see Bristow (1981), p. 56, and Appendix II.

BIBLIOGRAPHY

1. Altmann, N., P. Binkelmann, K. Dull, R. Mendolia and H. Stuck, "Bedingungen und Probleme betrieblich initierter Humanisierungsmassnahmen," Institut fur Sozialwissenschaftliche Forschung, Munich, 1980, mimeographed.

2. Ascoli, U. and A. Trento, "Sviluppo industriale e flessibita della forza lavoro: il settore calzaturiero," Inchiesta, Anno V n. 20 (ottobre - diccimbre 1975) 23 - 24.

3. Berger, Suzanne and Michael J. Piore, Dualism and Discontinuity in Industrial Societies, New York: Cambridge University Press, 1980.

4. Bagnasco, Arnaldo, Tre Italie: la problematica territoriale dello sviluppo italiano, Bologna: Il Mulino, 1977.

5. Bagnasco, Arnaldo and Rossella Pini, Sviluppo economico e transformazione sociopolitiche dei sistemi territoriali a economia diffusa, Quaderno Fundazione Giangiacomo Feltrinelli n. 14, 1981.

6. Birch, David A., The Role of Small Business in New England, M.I.T., Department of Urban Studies, mimeographed, 1980.

7. Brown, Lynne E. and John S. Hekman, "New England's Economy in the 1980's," New England Economic Review, (January - February, 1981): 5 - 16.

8. Brusco, Sebastiano, "Economie di scale e livello technologico nelle piccole imprese," in Augusto Graziani, ed., Crisi e ristrutturazione nell' economia Italiana, (Turin: Einaudi, 1975): 530 - 559.

9. Butera, Frederico, "La Linea di montaggio: La sua logica e il suo futuro," Politica ed economia (January - April, 1980).

10. Capecchi, Vittorio, "Giovani, lavoro precario e organizzione del tempo," paper presented at the Convegno sul laboro precario, organized by the CGIL, CISL, and VIL, Modena, June, 1981.

11. Capecchi, Vittorio and Enrico Pugliese, "Due citta a confronto: Bologna e Napoli," Inchiesta, 8 (September - December, 1978): 3 - 54.

12. Commune di Bologna, Macchine, scuola, industria: da mestiere alla professionalita operaia, Bologna: Il Mulina, 1980.

13. Coriat, Benjamin, L'atalier et le chronometrie, essai sur le Taylorisme, le Fordisme, et la production de masse, Paris: Christian Bourgois, 1979.

14. David, P. and E. Pattarin, "Retroterra rurale e condizione operaia femminile: il settore della maglieria," Inchiesta, Anno U no. 20 (October - December, 1975): 9 - 22.

15. Degl"Innocenti, Maurizio, "Geografia e struttura della cooperazione in Italia," in Guido Bonfante, Zeffiro Ciuffoletti, Maurizio Degl"innocenti, and Guido Sapelli, Il movimento cooperativo in Italia (Turin: Einaudi, 1980): 3 - 87.

16. Federazione Lavoratori Metalmeccanici, Sindacato Provinciale di Bologna Ristrutturazione e organizzozioni del laboro. Inquiesta nelle fabbriche metalmeccaniche della provincia di Bologna, Ufficia Sindacale n. 5, Bologna, 1975.

17. Federazione Lavoratori Metalmeccanici, Sindacato Provinciale di Bologna, Analisi del decentramento produttivo, Ufficio sindacale, n. 5, Bologna, June, 1977.

18. Frey, Luigi, "Il lavoro a domicilio in Lombradia," in Paolo Leon and Marco Marocchi, eds., Sviluppo economico italiano e forza-lavoro, (Venice: Massilio, 1973): 197 - 216.

19. Gabisso, Anna Maria, "Ruolo struttura dell'industria italiana delle machine utensili," Bolletion CERIS 5 (September, 1980): 9 - 48.

20. Hellman, Stephen, "The PCI's Alliance Strategy and the Case of the Middle Classes," in Donald L.M. Blackmer and Sidney Tarrow, eds., Communism in Italy and France (Princeton: Princeton University Press, 1975): 373 - 419.

21. Livraghi, Renata, "Le ricerche sul decentramento productive," in Quaderni rassegna sindacale 15 (January - April, 1977): 234 239.

22. Lorenzoni, Gianni, Una politica innovativa nelle piccole-medie imprese (Milan: Etas Libri, 1979).

23. Morelli, Ugo, "Mercato del lavoro e movimenti di immigrazione, Struttura dei fattori produttivi e ruolo della forza laboro in Emilia-Romagna," Quaderni di economia del lavoro, new series, no. 12, 1980.

24. Paci, Massimo, "Struttura e funzione della famiglia nello sviluppo industriale 'periferico," in Massimo Paci, ed., Famiglia e mercato del lavoro un una economia periferica (Milan: Franco Angoli, 1980): 9-70.

25. Pacci, Massimo, "Crisi, ristrutturazine e piccola impresa," Inchiesta 5(October-December, 1975): 3-8.

26. Piore, Michael J., Birds of Passage, (New York: Cambridge University Press, 1979).

27. President's Commission for a National Agenda for the Eighties, Urban American in the Eighties: Perspectives and Prospects: Report of the Panel on Policies and Prospects for Metropolitan and Nonmetropolitan America, U.S. Government Printing Office, Washington, D.C., 1980.

28. Ricolfi, Marco, "Legislazione economica e piccole imprese," in F. Ferrero and S. Scamuzzi, eds., L'industria in Italia: la piccola impresa (Rome: Editori Rivniti, 1979): 119-186.

29. Rolfo, Secondo, "La diffusione del controllo numerico nella produzine italiana di macchine utensili," in Bolletino CERIS 5(September, 1980): 125-136.

30 Russo, Margherita, "La natura e le implicazioni nel progresso tecnico: una verifica empirica," Modena, December, 1980, mimeographed.

31. Saba, Andrea, L'industria sommersa: il nuovo modello di sviluppo, (Venice: Marsilio, 1980).

32. Sabel, Charles, Work and Politics (Cambridge: Cambridge University Press, 1982).

33. Taranto, Roberto, Mariella Franchini, and Vittorio Maglia, L'industria Itali+na della macchina utensile (Bologna: il Mulino, 1979).

34. Trevisani, Andrea, "Prime note sull'artigianato metalmeccanico in Emilia-Romagna," Fim-Cisl Emilia-Romagna, Bologna, June, 1980, mimeographed.